Result Page

The invention relates to the screen of an insulator the corresponding preamble of the first claim.

An insulator should have as prolonged a creep way as possible, in order to minimize deriving stream on its surface. This becomes usually achieved with a number of the core from radial screens extending outward, whereby the number of the screens and their diameter are intending for the length of the creep way. Low deriving stream mean low Stromverluste. A prolonged creep way reduced also the risk of estimates, in particular if insulators in fields with high air pollution become used. Over with a predetermined insulator overall length as prolonged a creep way to obtained as possible, three structural measures are known: the number of the screens will become increased, the screen diameters enlarged, the screens will become on their underside with concentric ribs to provide, as it is known from the DE 44 26 927 A1. Also by old three measures together or by a compound of in each case two measures the creep way can become extended. By predetermined dimensions these measures boundaries can be set. From the EP 0,328,365 A3 it is for example known to take up at the screens of a porcelain insulator plastic caps those over the periphery of the original screens out-rich. This type of the creep way extension is expensive and it must two materials, porcelain as well as plastic, connected durably with one another become.

The invention is therefore the basis the object to manufacture insulators with as prolonged a creep way as possible with as small a material employment as possible economical.

▲ top

The solution of the object made with the help of the characterizing features of the first claim. Advantageous embodiments of the invention are stressed in the Unteransprüchen.

The screens on their surface according to invention exhibit a structure. This structure can consist of a plurality of grooves, which arcuate of the core of the insulator extend to the edge of screen. Additional grooves arranged still other in the interstices between these grooves can be, extend the spaced of the core, for example by the center of the screen outgoing, up to the edge and fill out thus the interstices. The structure can consist also of or several helical grooves longitudinal outgoing from the core of the insulator to the edge of screen. The grooves run out at its end free, preferably end them to open at the edge of the screen, so that itself the rainwater cannot back-ups. Since a screen on its surface exhibits a concave curvature, a natural slope insists on the surface of the screens, so that rainwater can flow off within the groove or the grooves beyond the edge of screen. Thus each groove is kept free favourably by dirt, because it is away-washed by the water running off continuous.

The risk of the pollution of a groove becomes small that the groove exhibits a rounded cross section, held by the fact, for example in form of a semicircle. Also a trapezoidal groove extending to the screen surface is possible as groove cross section, if the angle between groove wall and groove soil is an obtuse angle. Concentric structures on the top of screens cannot become with vertical or almost vertical suspended insulators provided, since in the structures that could collect itself horizontal or almost horizontal arranged screens dirt. Such concentric structures, for example circular grooves, can become at the most with horizontal or almost horizontal suspended insulators provided, because in this case the top of the screens stands vertical or nearly vertical and the rainwater again can free-wash the eventual contaminated structures.

A structure from grooves in the form of spirals or sheets pointing outward, which run out at the edge of the screen, can be against it with all installation positions on the screen surface provided. By these structures the self cleaning of the insulator screen surface does not become hindered, because the water can flow off in the grooves unobstructed beyond the edge of screen.

The creep way becomes additional substantial extended, if at the screen lower surface structures, in particular ribs, are likewise provided in particular. In addition, the structures can be the same, as they are arranged on the top of the screen.

The invention possible it for the first time, by structures both on the under and on the top of the same screen a maximum possible creep way to obtained. It means that the number of the screens can become opposite conventional insulators with same creep distance reduced or the diameters of the screens reduced. Thus material can become favourable saved, whereby also the insulators become easier.

The patterning of the surface of the screens is possible with all materials, become prepared from which the screens of insulators: Porcelain, glass, synthetic resin and the plastics of the group insulators. In particular with the screens of the group insulators the surface structures easy can be trained into the forms for forming out the screens.

On the basis embodiments the invention becomes more near explained.

Show:

Fig. 1 a supervision on a screen with a structure from itself radial, arcuate grooves extending outward,

Fig. 2 a screen in an embodiment after Fig. 1, whereby the interstices between the prolonged grooves with short grooves are filled,

Fig. 3 the top of a screen with an helical structure,

Fig. 4 the side view of this screen, partial cut,

Fig. 5 the top of a screen with a structure, existing from concentric grooves,

Fig. 6 the side view of this screen, partial cut, and

Fig. 7 the cross section by a trapezoidal groove.

In Fig. 1 is a screen 40 of an insulator shown, which sits on a core 41. On its top 42 runs a plurality of grooves 43, which from the core 41 outgoing arcuate to the edge 44 extends and, as here shown do not have, a rounded cross section. In the present embodiment the grooves of their beginning 45 to their outlet 46 in the edge 44 of the screen 40 extend over two quarters 47 of the surface of the screen 40, as is 49 apparent on the basis the two coordinate axes 48 and. The axis 49 cuts three other grooves in its course as radius of the screen of the beginning 45 of a groove 43 up to the outlet 46 of another groove. By the form and the layer of the grooves on the top 42 of the screen 40 the creep way becomes substantial extended with this embodiment.

In Fig. 2 is an embodiment shown, with which the screen 50 on its top 51 exhibits a comparable structure 52 like the surface of the screen in the previous embodiment after Fig. 1. Also here extended itself a number of grooves 53 of the core 54 to the edge 55 of the screen 50. Of the respective beginning 56 of the grooves 53 up to their deltas 57 in the edge 55 of the screen 50 enlarged itself the distance between the grooves 53. In these interstices 58 other in each case grooves are 59 symmetrical arranged. Thus the interstices become 58 structures likewise filled verlängemde by the creep way. The beginning 60 of the additional grooves 59 is appropriate for spaced to the core 54 of the insulator, here for instance on the center of the screen 50. Their deltas 61 lie in each case between the deltas 57 of the longer grooves 53 on the edge 55 of the screen 50.

In Fig. 3 a screen 1 of an insulator with an other embodiment for a structure shown extending the creep way. On the top 3 of the screen 1 an helical structure 4 in form of a groove is to be seen. It extended 5, to the edge 6 of the screen incipient close in two turns of the inside of the screen 1, with the core 2 in the point and runs out itself there at the location 7 in the edge 6.

In Fig. the side view of this screen 1 is to be seen to 4. As from this fig apparent is, the helical groove 4 has a rounded cross section 8. The round cross section, as well as the course of the helical groove 4 striving from the inside outward prevent 8 that into their dirt can settle. By the course from the inside outward the groove has, as in the Fig. 4 apparent, a slope, that with rain the cleaning effect of the water assisted.

As from the Fig. 4 other apparent is, possesses the screen 1 on its underside 9 ribs 10. These ribs 10 are here concentric 2 arranged around the core. They extend the additional creep way.

In Fig. 5 is the supervision on an other screen 20 shown. This screen sits likewise on a core 21. Contrary to the screen of the previous embodiment this screen 20 on its top 22 exhibits a structure from three concentric grooves 23, 24 and 25.

The side view of this screen 20 in Fig. it shows 6 that each groove exhibits a rounded cross section 26. Screens with a structure from concentric grooves around the core can become used only if the insulators are horizontal or nearly horizontal arranged. Only then is ensured that the dirt depositing on the surface of the screens washes itself off by the rain and is out-washed also from the grooves. Contrary to the embodiment after Fig. 4 is the underside 27 of this screen 20 smooth.

The Fig. an other possible embodiment of a surface structure shows 7. In this case the cutout from a screen is 30 shown, 32 incorporated on whose top 31 a structure is in form of a trapezoidal groove. As is 33 apparent from the cross section, the side walls 34 and 35 in an obtuse angle 36 on the bottom 37 stand. Thus forms an edge 38, which can offer however an approach to the pollution. Also this sectional shape of a groove the satisfied requirements to a self cleaning, if a corresponding slope and a corresponding obtuse angle 36 are present.

The here described structures are examples for the design of the top of screens. With the arrangement and design of the structures it must be paid attention always to the fact that the rainwater unobstructed from the structures can to flow off and develop no corners, edges and shoulders, which make the deposition possible of dirt.